



PicoBoo JR

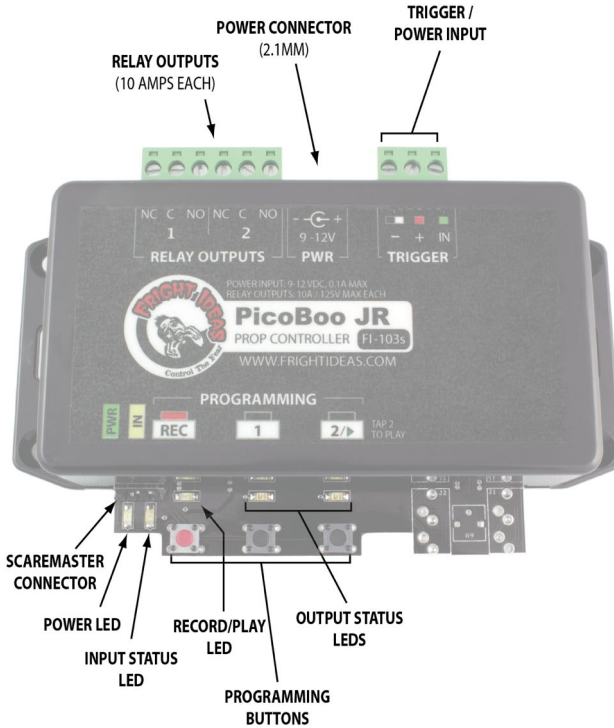
OPERATING MANUAL

V1.1 (Sep 8, 2011)



6 Oakside Court
Barrie, Ontario L4N 5V5
Tel: 1-877-815-5744 or 905-803-9274
www.frightideas.com

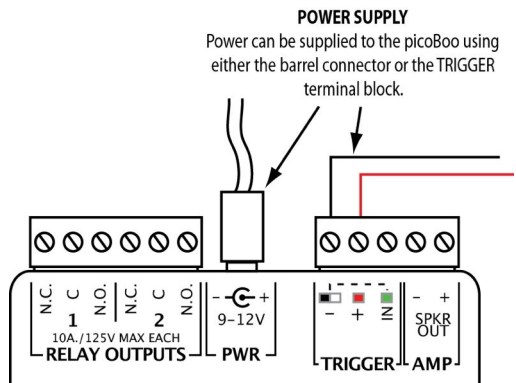
Getting Familiar with your PicoBoo



Powering Up

Sizing your Power Supply

Your PicoBoo's power supply must always be 9 to 12 volts DC. The wattage you'll need depends on whether you're trying to power solenoids from the same supply. Add up the wattage of all the devices that will be used at the same time and make sure your power supply's wattage is equal to or higher than that number. If your power supply does not have a wattage rating on it, multiply the A by the V to get it. If the A value has an "m" in front of it, divide it by 1000 first. For example, a 12V 500mA supply would be $12 \times 0.5 = 6$ Watts. The PicoBoo draws 2 watts.



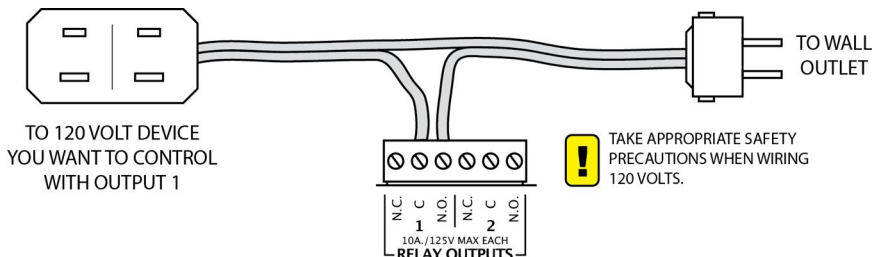
Relay Outputs

Wiring the Outputs

The outputs are simple contact closures, which are switches that you must wire to turn whatever device you want to control on or off. One wire must always go into the common terminal (C), the other into either the normally-open (N.O.) or normally-closed (N.C.). Using the N.O. terminal will result in the device normally being off, and turning on when you press the output's button, while the N.C. terminal will give you the opposite result. Each relay can handle 10 amps at 125 volts.

Controlling 120 Volt Loads

The easiest way to control a 120 volt load is to wire an extension cord through one of the output relays. Cut one of the wires, strip the two ends, and insert them into the C and N.O. terminals. If it's a three wire extension cord, cut the black wire as previously described.

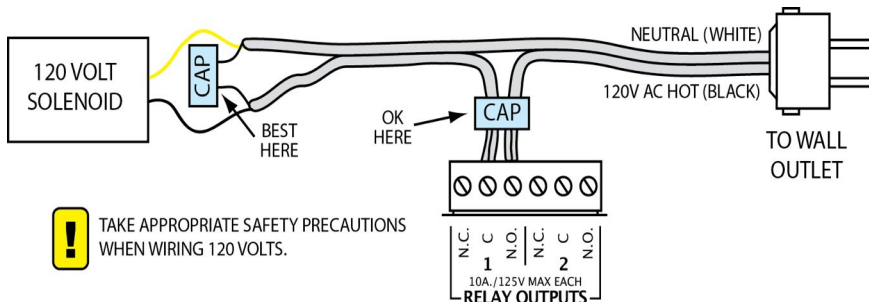


Controlling Solenoids or Large Relays

Solenoids and Large Relays create a lot of interference, which can wreak havoc with nearby electronic devices, including the PicoBoo. If you notice erratic behavior when controlling one of these devices, this is the most likely problem. The solution depends on whether you are using AC or DC solenoids.

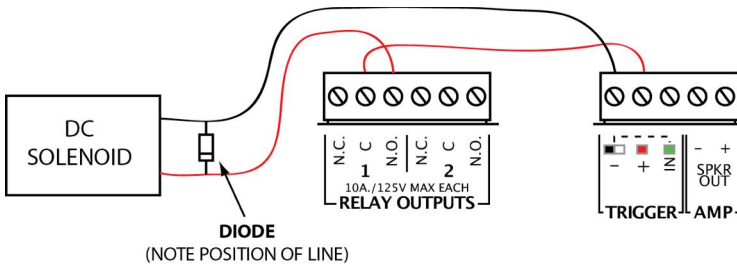
120 VAC Solenoids

High voltage capacitors can be used to absorb feedback from AC solenoids. The best place to install them is as close to the solenoid as possible. If that's not possible, then across the terminal block may work as well. A 0.1uF capacitor rated for at least 200V is recommended. (Radio Shack part numbers 272-1053 or 272-1051)



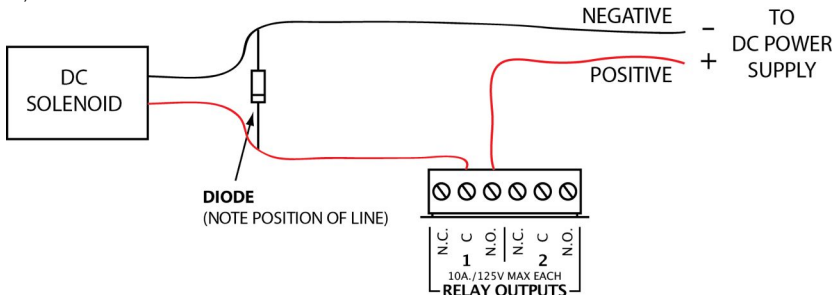
12 Volt DC Solenoids Powered from the PicoBoo's Power Supply

If the power supply used to power the PicoBoo is large enough, you can use it to power the solenoid as well. Use the trigger terminal block to "borrow" the PicoBoo's power supply. When sizing your power supply, make sure you reserve at least 2 watts for the PicoBoo. A diode is recommended to help reduce feedback, read below for more details.



24 Volt DC Solenoids or Any DC Solenoid Powered from a Separate Power Supply

If your solenoid is not 12 VDC, or your PicoBoo's power supply does not have enough wattage to power both the PicoBoo and the valve, you'll need to use a separate power supply. Diodes are recommended to absorb feedback from DC solenoids. Note the orientation of the diode, using the line on the one side as a guide. Locate the diode as close to the solenoid as possible. A standard 1N4001 – 1N4004 diode will work fine, and they're available for less than a dollar at your local Radio Shack. (Radio Shack part numbers 276-1103 or 276-1102)



Recording the Output Animation

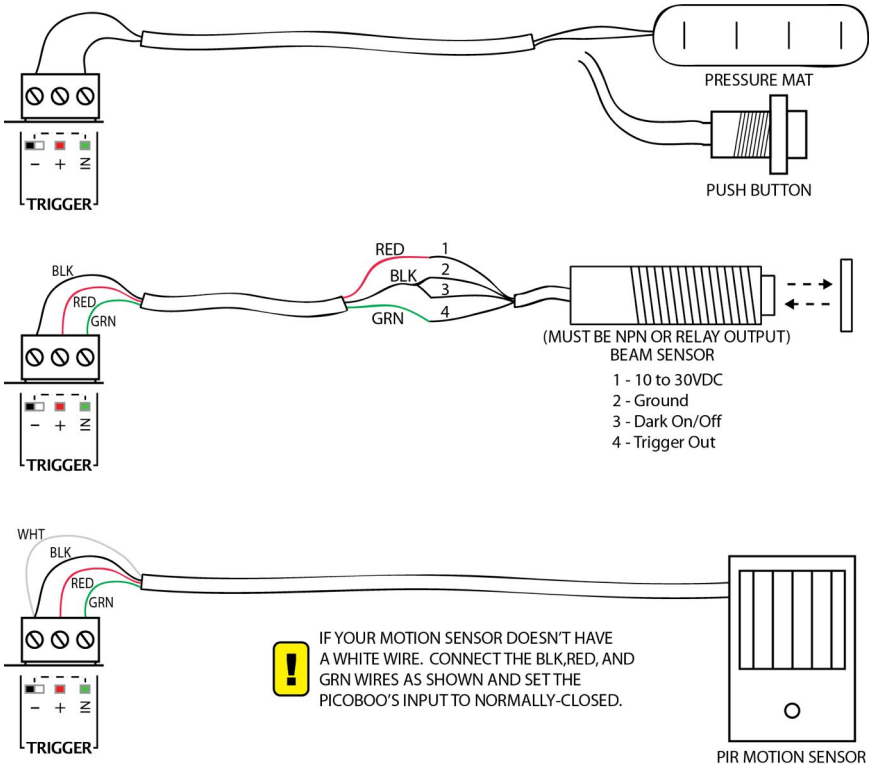
1. Press "REC". The red light will turn on.
2. Press the "1" and "2" output buttons to turn on the outputs as you want them to turn on. You can press each button as many times as you want or hold them for as long as you want. Whatever you do on those buttons will be recorded for up to 2 minutes.
3. Press "REC" again to stop recording. The scene is automatically saved. Press "2" or trigger the input to preview the scene.

NOTE: If you are having problems recording and are using a motion sensor for a trigger, disconnect the motion sensor and change the input back to normally-open before recording.

Trigger

Wiring the Trigger

The PicoBoos are designed to work with low-voltage sensors or contact closures only. DO NOT use typical outdoor motion sensors found at local hardware stores. The PicoBoo will trigger when the IN terminal is connected to the GND terminal. As illustrated below, this can be accomplished in several ways.



Using PIR Motion Sensors

Some motion sensor's outputs are normally-closed, meaning it connects the IN to GND when there's no motion, and disconnects it when there is. If this is the case, you must set the PicoBoo's input to normally-closed. See the Settings section on the next page for details on how to do this.

If you are unsure if your motion sensor is normally-open or normally-closed, connect it using the third diagram above. Power up the PicoBoo, wait a few minutes for the motion sensor to warm up. Trip your sensor as you watch the yellow input light on the PicoBoo. If the yellow light turns ON when the motion sensor activates, it's normally-open. If it turns off, it's normally-closed. If it does nothing there is a wiring problem.

Setting the Input Type to Normally-Closed or Normally-Open

1. Power down the PicoBoo.
2. Hold the "1" and "2" buttons to set the input to normally closed, or just "1" to set it to normally-open.
3. Power up the PicoBoo while holding the button(s).
4. When the red light flashes a few times, you can let go of the buttons. The setting is now changed.

Write-Protecting Your Audio and Animation

Once the PicoBoo is programmed to your liking you can write-protect it to make sure the "REC" button is not accidentally pressed, changing or deleting your program. The write-protect setting can be toggled on or off using the following steps:

1. Power down the PicoBoo
2. Hold the "2" button and power up the PicoBoo.
3. When the red light flashes a few times the write-protect has been toggled.

Troubleshooting

TROUBLESHOOTING TABLE	
Problem	Solution
"REC" light keeps flashing or the motion sensor won't trigger scare	- The motion sensor is warming up, wait 2 minutes, or - Input is set to normally-closed when it should be normally-open (see Trigger section for more details).
Can't record animation	- PicoBoo is write-protected, disable write-protection (see Settings section for more details).
Animation playback stops before it's done	- Put diodes or capacitors on your solenoids (see Relay Outputs section for more details).

Specifications

SPECIFICATIONS TABLE	
Physical	
Length	5.375"
Width	2.5" enclosure only, 3.5" including connectors
Height	1.25"
Weight	0.3 Lbs (0.14Kg)
Electrical	
Operating Voltage	9 -12 VDC
Power Consumption	2 watts (150mA)
Relay Outputs	120 VAC max., 10 amps max. (each output)